UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte, FRANCISCO J. ROMERO, and THOMAS E. TURICCHI, JR.

Appeal No. 2006-2091
Application No. 09/709,705
Technology Center 2100

Decided: January 31, 2007

Before JOSEPH F. RUGGIERO, ALLEN R. MACDONALD, and JEAN R. HOMERE, *Administrative Patent Judges*.

MACDONALD, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-12, 14-25, and 27-30. The Examiner has indicated that claims 13, 26, and 31 contain allowable subject matter if rewritten in independent form (Answer 10, 11).

THE INVENTION

The disclosed invention pertains to an apparatus and method to automatically activate a reserve resource when the load on the number of active resources meets a threshold specified in a resource usage policy (Specification 1).

Representative claim 1 is illustrative:

1. A method to automatically activate a reserve hardware component, comprising:

monitoring a load on a number of active resources;

comparing said load to a threshold specified in a resource usage policy; and

automatically activating said reserve hardware component when dictated by said resource usage policy.

THE REFERENCES

The Examiner relies upon the following references as evidence of unpatentability:

Forecast	US 6,230,200 B1	May 8, 2001 (Filed Sept. 8, 1997)
Lumelsky	US 6,516,350 B1	Feb. 4, 2003 (Filed Jun. 17, 1999)

THE REJECTION

The following rejection is on appeal before us:

1. Claims 1-12, 14-25, and 27-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Lumelsky in view of Forecast.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Brief and the Answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the Examiner and the evidence of obviousness relied upon by the Examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the Appellants' arguments set forth in the Brief along with the Examiner's rationale in support of the rejection and arguments in rebuttal set forth in the Examiner's Answer.

It is our view, after consideration of the record before us, that the evidence relied upon supports the Examiner's rejection of the claims on appeal. Accordingly, we affirm.

GROUPING OF CLAIMS

We consider the obviousness of the following logical groups of claims, as defined under separate subheadings and argued separately by Appellants in the Brief.

GROUP A: Claims 1-12, 14-22, 24, 27, and 29.

GROUP B: Claims 23, 25, 28, and 30.

MOTIVATION

With respect to all claims on appeal, Appellants argue that the Examiner has failed to provide a proper motivation for combining the Lumelsky and Forecast references (Br. 8). Appellants point out that the *triggers* that cause Lumelsky and Forecast to take action are different (*id.*). Appellants note that Lumelsky begins to *replicate content* to a new server when there are *no more available resources* on all the servers managed by the system (i.e., Lumelsky teaches that replication of content is triggered in response to an *increased load*) (Br. 9, emphasis added). Appellants note that Forecast only activates a spare stream server when an active server has *failed* (*id.*). Appellants assert that the different triggers of Lumelsky and Forecast would not have motivated one of ordinary skill in the art to combine the references in the manner suggested by the Examiner (Br. 8-9). Appellants conclude that the Examiner has engaged in impermissible hindsight reconstruction in formulating the rejection (Br. 9).

The Examiner disagrees. The Examiner essentially restates the motivation set forth in the rejection and points to Forecast at (col. 1, ll. 15-19). The Examiner asserts that it would have been obvious to one of ordinary skill in the art to combine the teachings of Lumelsky and Forecast to activate a standby stream server when a stream server fails to timely acknowledge commands *because it would improve system performance* (emphasis added). The Examiner notes that a stream server inherently includes hardware components such as a processor and a memory (Answer 9).

We note that the Forecast reference supports the motivation proffered by the Examiner of improving system performance (e.g., "performance guarantees for a file server") (col. 1, ll. 15-19). We further note that the Court of Appeals for the Federal Circuit has found that "[a]s long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor." *In re Beattie*, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992).

In the instant case, we note that both Lumelsky and Forecast are broadly directed to the problem of allocating resources associated with file servers:

> Second, if there are no more sufficient available resources on all the servers managed by the system, the requested content may be replicated from the server (111) to the servers (113) and 114) and made available to clients (123) and (124) via respective links (310) and (311), as shown in FIG 3.
>
> (Lumelsky, col. 8, ll. 48-51).
>
> The present invention relates generally to data storage systems, and more particularly to resource allocation and performance guarantees for a file server.
>
> (Forecast, col. 1, ll. 15-19).

After carefully considering all of the evidence before us, we do not agree with Appellants that the different triggering mechanisms of Lumelsky and Forecast would have discouraged a person of ordinary skill from following the path set out in the references and modifying Lumelsky with the teachings of Forecast in the manner suggested by the Examiner. We

note that Lumelsky is directed to dynamically allocating resources (i.e., replicating multimedia content according to demand) in a manner that is "beneficial, accountable, and *seamless* to the users who are requesting access to multimedia content" (col. 5, ll. 16-21, emphasis added). We further note that Forecast's system discloses keeping one or more stream servers in a standby mode to be used as "hot spares" in case of an active server failure (col. 9, ll. 31-36). Therefore, we find that Forecast's system would have improved Lumelsky's system reliability by providing replacement "hot spare" servers to ensure *seamless* (i.e., uninterrupted) access by users in the event of an active server failure.

We do not find Appellants' argument persuasive that the Examiner has impermissibly used hindsight in formulating the rejection. We note that the Court of Appeals for the Federal Circuit has determined that the motivation to combine under § *103* must come from a teaching or suggestion within the *prior art*, within the *nature of the problem to be solved*, or within *the general knowledge of a person of ordinary skill* in the field of the invention, to look to particular sources, to select particular elements, and to combine them as combined by the inventor. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 665, 57 USPQ2d 1161, 1167 (Fed. Cir. 2000) (emphasis added). In the instant case, we note that the Examiner has taken the motivation directly from the Forecast reference at col. 1, ll. 15-19 (*see* Answer 9). We also note that Forecast provides evidence that it would have been within the *general knowledge of a person of ordinary skill in the art* that reliability of a distributed file server system would have been enhanced by providing "hot spare" servers to take over in the event of an active server failure (col. 9, ll. 31-36).

Furthermore, our reviewing court has recently reaffirmed that "an implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the 'improvement' is technology-independent and the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient . . . . In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him *capable* of combining the prior art references." *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368, 80 USPQ2d 1641, 1651 (Fed. Cir. 2006) (emphasis in original). In the instant case, we find that the ordinary artisan who possessed knowledge and skills relating to file server resource management and allocation at the time of the invention would have been *capable of* combining Lumelsky and Forecast in the manner suggested by the Examiner for the purpose of realizing *seamless* system performance in the event of a stream server failure.

For at least the aforementioned reasons, we find the Examiner has provided an adequate motivation that reasonably sets forth why an artisan would have been motivated to modify Lumelsky's resource allocation system with a system for maintaining operations in the event of an active server failure, as disclosed by Forecast.

We now address specific claim limitations *infra* with respect to each group of claims separately argued in the Brief.

GROUP A, claims 1-12, 14-22, 24, 27, and 29

We consider first the Examiner's rejection of claims 1-12, 14-22, 24, 27, and 29 as being unpatentable over the teachings of Lumelsky in view of

Forecast. Since Appellants' arguments with respect to this rejection have treated these claims as a single group which stand or fall together, we will select independent claim 1 as the representative claim for this rejection because it is the broadest independent claim in this group.
See 37 C.F.R. § 41.37(c)(1)(vii).

Appellants note that the Examiner has asserted that Forecast can be construed as teaching the automatic activation of a reserve hardware component because the activation of a hot spare stream server would *necessarily* include the activation of a plurality of *hardware components* e.g., a *processor* and a *memory* (Br. 10; *see also* Final Office Action, 3, § 4, emphasis added). Appellants acknowledge that the activation of enough hardware components might eventually result in the activation of a server (Br. 10). However, Appellants assert that the decision being made in claim 1 is more granular than the activation of a server (*id.*). Appellants argue that the combined teachings of Lumelsky and Forecast do not result in a method that performs the action of "automatically activating a reserve *hardware component* when dictated by [a] resource usage policy" (Br. 10, emphasis in original). Appellants further note that Forecast describes a distinction between servers and components (col. 1, ll. 53-55) (Br. 10).

The Examiner disagrees. The Examiner notes that Lumelsky teaches automatically activating reserve resources when dictated by a resource usage policy (col. 8, l. 48 through col. 10, l. 44). The Examiner further notes that Lumelsky teaches a Service Control Plan (SCP) that dynamically enables borrowing of underused resources from *servers 113* and *114* for increasing the resources of *server 111* based on criteria defined in policies employed by the SCP. The Examiner acknowledges that Lumelsky does not *explicitly*

teach that the reserve resource is a *hardware component*. The Examiner relies upon Forecast for teaching a "reserve hardware component" (e.g., *see stream servers 21* that are kept in a standby or reserve mode as "hot spares" in case an active server should fail, col. 9, ll. 31-36) (Answer 7-8).

We begin our analysis by construing the meaning and scope of the claimed "reserve hardware component" (claim 1). "During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1358, 49 USPQ2d 1464, 1467 (Fed. Cir. 1999).

When we look to the instant Specification for *context*, we note that the Specification broadly discloses *reserve resources* (i.e., reserve resource 80) embodied as a CPU, a memory, a peripheral device, or an entire system such as a host computer, PC, or *server*:

> FIG. 2 is illustrative of various types of *resources* 60, *80* which may be active or on reserve in the system of FIG. 3. An active resource 60 or *reserve resource 80* can be an individual component 200-208 and 211-219 such as a CPU, a memory, a peripheral device, etc., and/or can be an entire system 210, 225 such as a host computer or PC, a *server*, *etc.* Likewise, the active resource 60 and the *reserve resource 80* can be a combination thereof, such as a CPU, a memory, and a PC system.
>
> (Specification, 8, ll. 15-21, emphasis added).

When we properly construe the claim term "reserve hardware component" in accordance with the broadest reasonable interpretation

consistent with the Specification, we find that the evidence supports the Examiner's position. We note that Appellants have acknowledged in the Brief that the activation of enough hardware components might eventually result in the activation of a *server* (Br. 10). We further note that Appellants' own Specification discloses that *resource 80* can be embodied as a *server* (Specification, p. 8, l. 20). Therefore, we conclude that the Examiner's broad but reasonable interpretation of the recited "reserve hardware component" is fully consistent with the breadth of Appellants' disclosure.

We also agree with the Examiner that activation of a "hot spare" stream *server* would inherently include the activation of a plurality of *hardware components* (e.g., a *processor* and a *memory*), as necessary to fetch and execute stored computer program code. We note that Forecast explicitly discloses that each of the *stream servers 21* include an "Intel processor . . . and at least 64 MB of random-access memory" (col. 6, ll. 19-21). We note that Appellants' arguments appear to narrowly construe *activation* of a hardware component as being limited to *supplying electrical power to an electrically inactive hardware component.* In contrast, we note that the claims on appeal are silent with respect to activation of a hardware component by applying electrical power. We note that the Examiner appears to have adopted a broader interpretation, i.e., where "activation" means the hardware component begins to execute program code for an intended purpose. We find the Examiner's broad but reasonable interpretation is consistent with the instant Specification that discloses an embodiment where activation requests are made by program code, i.e., where activation means activation of an electrically active hardware component (Specification, 13, ll. 16-21).

Furthermore, we find unpersuasive Appellants' attempt to construe their own claim language in light of the *prior art* (Br. 10, i.e., referring to Forecast's description of a *component* and a *server*, col. 1, ll. 53-55). In particular, we note that such construction departs from the broadest reasonable interpretation consistent with the instant *Specification*.

For at least the aforementioned reasons, we find that the Examiner's proffered combination of Lumelsky and Forecast teaches or suggests all that is claimed with respect to representative claim 1. Accordingly, because the Examiner has met the burden of establishing a prima facie case of obviousness, we will sustain the Examiner's rejection of representative claim 1 as being unpatentable over Lumelsky in view of Forecast.

Pursuant to 37 C.F.R. § 41.37(c)(1)(vii), we have decided the appeal with respect to the remaining GROUP A claims 2-12, 14-22, 24, 27, and 29 on the basis of the selected claim alone. Therefore, we will sustain the Examiner's rejection of these claims as being unpatentable over Lumelsky in view of Forecast for the same reasons discussed *supra* with respect to claim 1.

GROUP B, claims 23, 25, 28, and 30

Lastly, we consider the Examiner's rejection of dependent claims 23, 25, 28, and 30 as being unpatentable over the teachings of Lumelsky in view of Forecast. Since Appellants' arguments with respect to this rejection have treated these claims as a single group which stand or fall together, we will select dependent claim 23 as the representative claim for this rejection. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Appellants disagree with the Examiner's assertion that Forecast's activation of an entire "standby" server (that includes a hardware

component) is equivalent to Appellants' activation of a "component of an active server resource," as claimed (Br. 10). Appellants argue that because Forecast fails to teach the activation of a hardware component, the Examiner's position would require construing Forecast's standby server as an active server resource (Br. 11). Appellants assert that this would result in Forecast activating an "active server resource," which is nonsensical (*id.*).

The Examiner disagrees (Answer 10). The Examiner asserts that Forecast teaches the reserve processor is a component of an active server resource (col. 9, ll. 6-36) (Answer 10). The Examiner asserts that Forecast teaches activating a standby server such that the server's hardware components (e.g., processor resources) are inherently activated (*id.*).

We will sustain the Examiner's rejection of representative claim 23 for essentially the same reasons argued in the Answer. We note that the language of representative claim 23 merely requires a *reserve processor* that is a *component* of an *active server resource*. We agree with the Examiner that a redundant "hot spare" server processor is broadly a *component* of an active server "resource" that has a failsafe capability (Forecast, col. 9, ll. 31-36). Therefore, we find that the Examiner's proffered combination of Lumelsky and Forecast teaches or suggests all that is claimed with respect to representative claim 23. Accordingly, because the Examiner has met his/her burden of establishing a prima facie case of obviousness, we will sustain the Examiner's rejection of representative claim 23 as being unpatentable over Lumelsky in view of Forecast.

Pursuant to 37 C.F.R. § 41.37(c)(1)(vii), we have decided the appeal with respect to the remaining GROUP B claims 25, 28, and 30 on the basis of the selected claim alone. Therefore, we will sustain the Examiner's

rejection of these claims as being unpatentable over Lumelsky in view of Forecast for the same reasons discussed *supra* with respect to claim 23.

DECISION

In summary, we have sustained the Examiner's rejection of all the claims on appeal. Therefore, the decision of the Examiner rejecting claims 1-12, 14-25, and 27-30 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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